AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A method for smoothing and polishing a to-be-smoothed surface[[s]] ~~by treating them the surface with energetic radiation (3), in particular laser radiation, in which~~ , comprising:

a first treatment step comprising remelting the ~~to-be-smoothed~~ to-be-smoothed surface ~~(1) is remelted in a first treatment step~~ using ~~said~~ energetic radiation ~~(3)~~ ~~and~~ while employing first treatment parameters at least once down to a first remelting depth ~~(10),~~ which is greater than a structural depth of ~~the~~ to-be-smoothed structures of said to-be-smoothed surface ~~and is ≤ 100 µm, wherein in said first treatment step~~, wherein the using of energetic radiation includes using continuous energetic radiation or pulsed energetic radiation, with a pulse duration of ≥ 100 µs ~~is employed and~~ such that said surface ~~(1)~~ is remelted down to a first remelting depth ~~(10)~~ of about 5 to 100 µm.

2. (Currently Amended) A method according to claim 1, ~~wherein in~~ further comprising:

a second treatment step comprising leveling micro-roughness remaining on said surface after said first treatment step by remelting the micro-roughness using

said energetic radiation [[(3)]] ~~and~~ while employing second treatment parameters, ~~micro-roughness remaining on said surface [[(1)]] after said first treatment step is leveled by remelting~~ down to a second remelting depth [[(14)]], and by evaporating roughness peaks, ~~which~~ wherein second remelting depth is less than said first remelting depth ~~(10), and by evaporating roughness peaks (15)~~.

3. (Previously Presented) A method according to claim 1, ~~wherein~~ including selecting said first treatment parameters ~~are selected in such a manner~~ so that no ablation of material occurs.

4. (Currently Amended) A method according to claim 2, wherein the using step includes using pulsed laser radiation with a pulse duration of ≤ 1 µs ~~is employed in said second treatment step~~.

5. (Currently Amended) A method according to claim 1, wherein the remelting step includes remelting said surface ~~(1) is remelted~~ in said first treatment step down to a first remelting depth [[(10)]] of approximately 10 to 80 µm.

6. (Currently Amended) A method according to claim 2, wherein the remelting of said surface ~~(1) is remelted~~ in said second treatment step includes remelting said surface down to a second remelting depth [[(14)]] of maximally 5 µm.

7. (Currently Amended) A method according to claim 1, wherein the remelting step includes remelting said surface ~~[[(1)]] is remelted~~ in said first treatment step multiple times in succession.

8. (Original) A method according to claim 7, wherein with each new remelting step, selecting said first remelting depth ~~is selected~~ less deep than in the previous remelting step.

9. (Currently Amended) A method according to claim 7, wherein the remelting step includes leading said energetic radiation ~~(3) is led~~ in parallel paths [[(6)]] over said surface [[(1)]] with successive remelting steps of a section [[(4)]] of said surface [[(1)]] being carried out with paths [[(6)]] turned at an angle.

10. (Currentl y Amended) A method according to claim 1, wherein treatment in said first treatment step occurs successively in a multiplicity of adjacent sections [[(4)]] of said surface [[(1)]], with the treatment parameters being changed continuously or in steps towards ~~the~~ a border of said sections [[(4)]] in such a manner that said first remelting depth [[(10)]] decreases to said border of said sections [[(4)]].

11. (Currentl y Amended) A method according to claim 1, wherein in order to retain edges [[(13)]] on said surface [[(1)]], said first treatment parameters of said first treatment step are changed continuously or in steps in such a manner that said first remelting depth [[(10)]] decreases toward said edges [[(13)]].

12. (Currentl y Amended) A method according to claim 1, wherein the remelting step includes leading said ~~laser~~ energetic radiation ~~(3) is led~~ on one or a multiplicity of meandering paths [[(6)]] over said surface [[(1)]].

13. (Currentl y Amended) A method according to claim 2, ~~wherein~~ including impinging said surface ~~(1) is impinged~~ with protective gas during said first and said second treatment steps.

14. (Currentl y Amended) A method according to claim 1, wherein treatment occurs with a beam cross section in form of a line or with a rectangular beam cross section of said energetic radiation [[(3)]].

15. (Currentl y Amended) A method according to claim 1, further comprising preheating ~~wherein~~ said to-be-smoothed surface [[(1)]] ~~is preheated~~ before remelting.

16. (Currentl y Amended) A method according to claim 1, ~~wherein~~ including selecting said first treatment parameters ~~are selected in such a manner~~ so that structures of significance of said to-be-smoothed surface [[(1)]] are retained during remelting.